APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/410,974	10/01/1999	ANDREW M. JONES	99-TK-252	7705

7590 12/31/2003	EXAMINER

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ART UNIT	PAPER NUMBER
2665	14

DATE MAILED: 12/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/410,974	JONES ET AL.
	Examiner	Art Unit	
	Justin M Philpott	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003*.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3-10 and 12-20* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-10 and 12-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

    a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)		4)☐ Interview Summary (PTO-413) Paper No(s). _____ .	
2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)		5)☐ Notice of Informal Patent Application (PTO-152)	
3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .		6)☐ Other: .	

DETAILED ACTION

Response to Amendment

1. In the Amendment filed October 6, 2003, Applicant has canceled claims 2 and 11, amended claims 1, 3, 6, 7, 9, 10 and 12 in an attempt to overcome prior art rejections, and amended the specification to correct minor informalities. In view of the amendment, the specification is no longer objected to.

Response to Arguments

2. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 3, 4, 6, 7, 9, 10, 12-14, 16, 17 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,283,904 to Carson et al. in view of U.S. Patent No. 6,397,325 to Jones et al.

Regarding claims 1, 6, 7, 9, 10 and 12, Carson teaches a plurality of functional modules (e.g., MPIC 104 in FIG. 2, see also col. 4, line 13 – col. 18, line 35) interconnected via a packet router (e.g., MPIC I/O unit 102), each functional module having packet handling circuitry (e.g., circuitry in FIG. 5 comprising MPIC bus send/receive & arbitration 226) for generating and

receiving packets conveyed by the packet router; wherein at least a first set of the functional

modules, acting as initiator modules, have packet handling circuitry which includes request

packet generation circuitry for generating request packets (e.g., interrupt request, see col. 5, lines

17-54, specifically lines 44-45) for implementing transactions, each request packet including a

destination indicator (e.g., destination, see FIG. 7 and col. 8, line 40 – col. 14, line 63)

identifying a destination of the packet and an operation field (e.g., bits 0-17 in FIG. 7) denoting

the function to be implemented by the request packet, wherein the operation field comprises a

number of bits (0-19) of which a single packet type bit (e.g., trigger mode) denotes the type of

packet, three operation family bits denote the function (e.g., delivery mode) to be implemented

by the packet and two operation qualifier bits (e.g., remote read status) act to qualify the

function. While Carson may not specifically disclose exactly eight bits in the operation field,

exactly four operation family bits and exactly three operation qualifier bits, it is generally

considered to be within the ordinary skill in the art to adjust, vary, select or optimize the

numerical parameters or values of any system absent a showing of criticality in a particular

recited value. The burden of showing criticality is on Appellant. In re Mason, 87 F.2d 370, 32

USPQ 242 (CCPA 1937); Marconi Wireless Telegraph Co. v. U.S., 320 U.S. 1, 57 USPQ 471

(1943); In re Schneider, 148 F.2d 108, 65 USPQ 129 (CCPA 1945); In re Aller, 220 F.2d 454,

105 USPQ 233 (CCPA 1955); In re Saether, 492 F.2d 849, 181 USPQ 36 (CCPA 1974); In re

Antonie, 559 F.2d 618, 195 USPQ 6 (CCPA 1977); In re Boesch, 617 F.2d 272, 205 USPQ 215

(CCPA 1980). Thus, at the time of the invention it would have been obvious to one of ordinary

skill in the art to utilize a specific other number of bits in Carson, since it is generally considered

to be within the ordinary skill in the art to adjust, vary, select or optimize the numerical

parameters or values of any system absent a showing of criticality in a particular recited value.

However, Carson may not specifically disclose a second set of functional modules acting

as target modules generates response packets wherein the single packet type bit distinguishes

between request packets and response packets.

Jones teaches a circuit similar to Carson wherein a plurality of functional modules (e.g.,

14 in FIG. 1) have packet handling circuitry (e.g., event logic) for generating and receiving

packets. Jones further teaches target modules having packet receiver logic for receiving request

packets and generating response packets (e.g., see col. 3, line 29 – col. 4, line 65 and col. 19,

lines 39-50), wherein a single packet type identifier (e.g., opcode, see col. 15, line 55 – col. 16,

line36) distinguishes request packets and response packets. While Jones may not specifically

disclose the identifier is specifically one bit, it is well known in the art that a single bit may be

implemented to distinguish between two possibilities. Jones specifically teaches the packets are

either request packets or response packets. Thus, at the time of the invention it would have been

obvious to one of ordinary skill in the art for the opcode of Jones to comprise a single bit to

distinguish between request and response packets. Furthermore, Jones teaches the opcode of

each request packet comprises a zero or one in the tens column (e.g., 0x09, 0x01, 0x11, 0x12,

etc.) while the opcode of each response packet comprises a two or three in the tens column (e.g.,

0x29, 0x21, 0x31, 0x32, etc.), and both zero and one are represented in binary respectively by 00

and 01 (i.e., a request packet is identified by a zero as the underlined bit) while two and three are

represented in binary respectively by 10 and 11 (i.e., a response packet is identified by a one as

the underlined bit). Thus, Jones also suggests that a single bit distinguishes between request and

response packets by using numerals within the opcode to distinguish between request and response packets.

Regarding claims 3, 13, 17 and 19, Carson teaches the function in each request packet is a memory access operation including cache operations (e.g., see col. 5, lines 46-50).

Regarding claims 4, 10 and 14, Carson further teaches a physical mode (e.g., see col. 5, line 60 – col. 6, line 6) wherein a unique 8-bit MPIC-ID selects a single destination (i.e., primitive access) or a broadcast to all MPICs (i.e., compound access).

Regarding claim 16, while Carson may not specifically disclose memory access operations include load, store, read-modify-write and swap operations, Examiner takes official notice that such operations are commonly-performed memory operations well known in the art. Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art for the memory access operations of Carson to include load, store, read-modify-write and swap operations since it is well known in the art that such operations are commonly-performed memory operations.

5.   Claims 5, 8, 15, 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carson in view of Jones, further in view of U.S. Patent No. 5,704,034 to Circello.

Regarding claims 5, 8 and 15, Carson in view of Jones teaches the circuit according to claims 1, 7 and 12 as discussed above, however, Carson in view of Jones may not specifically disclose the request packets include a data object, the size of which is denoted by the operation qualifier. Circello teaches a circuit for initializing a data processing system which involves sending signals (e.g., processor status PST and data signals DDATA) from a module (e.g., 10 in

FIG. 1) to a system (e.g., 7). The signals include a data object (e.g., DDATA) and the size of the

data object is denoted by two bits of the PST (i.e., an operation qualifier). Particularly, when a

data object is transferred (indicated by bits 3:2 equaling 10, see FIG. 10), the size of the data

object is denoted by bits 1:0 (wherein 00, 01, 10, and 11 denote in binary the number of bytes

which are to be transferred). In the event transfers of more than four bytes were desired, at the

time of the invention it would have been obvious to one of ordinary skill in the art to use

additional bits in the operation qualifier (e.g., three) to denote the size of the data object (e.g.,

DDATA) since it is generally considered to be within the ordinary skill in the art to adjust, vary,

select or optimize the numerical parameters or values of any system absent a showing of

criticality in a particular recited value. Furthermore, applying the teachings of Circello to the

system of Carson in view of Jones would provide an improved system wherein an element would

advantageously be aware of the size of particular data transfers prior to transfer completion.

Thus, at the time of the invention it would have been obvious to one of ordinary skill in the art to

apply the teachings of Circello to the system of Carson in view of Jones in order to provide an

improved system wherein an element would advantageously be aware of the size of particular

data transfers prior to transfer completion.

Regarding claims 18 and 20, Circello further teaches four PST bits denoting that the PST

(e.g., operation field) is user defined (see FIG. 10, when PST[3:0] equals 0011).

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Justin M Philpott whose telephone number is 703.305.7357. The

examiner can normally be reached on M-F, 9:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Huy D Vu can be reached on 703.308.6602. The fax phone number for the

organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the receptionist whose telephone number is 703.305.4750.

Justin M Philpott

HUY D. VU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600